i-RAM (GC-RAMDISK-RH)

User's Manual

Rev. 1003
12MD-RAMDISKRH-1003R

* The WEEE marking on the product indicates this product must not be disposed of with user's other household waste and must be handed over to a designated collection point for the recycling of waste electrical and electronic equipment!!
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English

Thank you for selecting GIGABYTE's latest i-RAM product. This user's manual gives information about i-RAM features and specifications, and will lead you through the installation of i-RAM in your system. Read this guide and related precautions before installing i-RAM.

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1. Product Features

- Fastest System Boot-Up speed--Fully SATA1.0a compliant; i-RAM can be used as a boot device.
- Fastest Solid State Disk--Dedicated DDR design, Supports DDR 266/333/400 memory modules.
- Fastest Data Access--Ideally design for applications that require massive storage data access, like Audio/Video Capture & Edit, 3D Graphics designs, File sharing, Database exchange, Server, Workstation and Web/Email servers etc.
- Data Protection
  -- After PC shutdown, the stored data can be protected by using PC standby power.
  --When AC wall power is off or after unplug power cord; the stored data can be protected by using i-RAM backup battery(Note 1). This is good for user/engineer to do some needful actions (e.g. move i-RAM alone or with PC in the short distance/period and backup i-RAM data) before AC wall power resume or re-plug in power cord.
- No additional drivers required.
- Supports Backup and Restore software utilities.
- Noiseless solution compared to traditional hard drives.
- Vibration proof compared to traditional hard drives.

2. Product Specifications

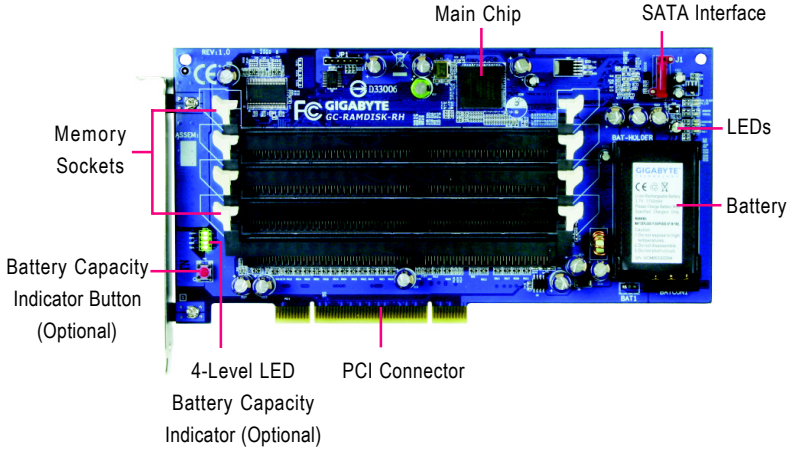
- PCI 2.2 Mechanical Compliant:
- Get working power from PCI slot
- Suitable for PC and Server systems
- SATA Interface
- SATA 1.0a Compliant
- Supports one SATA connector
- Up to 150MB/s data transfer rate
- Memory Interface
- Max amount of memory supported is 4GB
- Four 184-Pin/2.5V DDR DIMM sockets
- Supports DDR 266/333/400(Note 2)
- Supports DIMM up to 4.2mm thickness (including heat-sink)
- Backup Battery
- One 1,700mAh lithium battery

(Note 1): Actual battery life may vary based on usage and different memory modules.
(Note 2): Please refer to the recommended memory support list on Page 7.

3. System Requirements

- One available PCI 2.2 compliant slot
- One available SATA (1.5Gb/s) compliant connector
- Systems based on Intel ICH6/ICH7 series, VIA 8237 series, SiS 964, or ULi M1689 South Bridge.

4. Board Layout



5. Precautions

General Precautions:

- The memory size available will be less than the total size of the installed memory.
- When the system is set to RAID mode, the RAID controller might occupy some disk space as buffer. For example, when the ICH7R RAID controller is set to RAID 0 or RAID 1, the total hard drive capacity will be 512MB~1GB less than the actual capacity.
- For users who wish to install operating system in i-RAM, please prepare the minimum free hard disk space for the operating system.
- To protect data integrity and extend battery lifespan, it is not recommended that you unplug the AC power cord of the power supply.

Important Battery Information:

- Please do not remove the battery. If the battery appears to be damaged or does not function properly, please contact the place of purchase for further checking.
- i-RAM memory sockets are powered on after the battery is charged, please handle with care to prevent short circuit and damage.
- Do not dispose of the battery in fire. To avoid injuries or causing fire hazard, please do not disassemble or touch battery terminals with metal objects or your fingers.
- The 4-level LED battery capacity indicator located in the lower left corner of the i-RAM shows about how much charge is left. The more the LEDs light up, the more power remain in the battery. Press and hold the red battery capacity indicator button to show the battery charge level (Optional).

Data Loss Preventions:

To prevent data from being lost or damaged, read the following guidelines:

- Do not remove i-RAM from the PCI slot or remove the AC power from the power supply for too long.
- Do not remove the installed memory module(s) from i-RAM.
- Do not remove i-RAM from the PCI slot and also detach the battery.
- Please back up the data in i-RAM regularly using either GIGABYTE's backup tool (please download it from GIGABYTE's website at http://www.gigabyte.com.tw) or third-party backup utilities. Please note that data in i-RAM is not covered under the warranty.

CAUTION

Operation Ambient Temperature : 0°C~45°C
Storage Ambient Temperature : -20°C~50°C
The data in the i-RAM will be lost when the battery has no more power.

6. Installation Directions

Please read the following installation directions before using i-RAM:

Step 1: Remove System Power and i-RAM battery

Remove system power and take off i-RAM battery (Figure 1).

NOTE Each time before setting up the i-RAM, make sure to remove system power and the i-RAM battery to prevent damage.

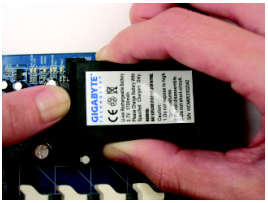


Figure 1

Step 2: Install Memory Module(s)

Place i-RAM card on an anti-static pad. The DIMM socket has a notch, so the memory module can only fit in one direction. Push the clips at either end of the DIMM socket outwards to the open position. Insert the memory module into the DIMM socket. Then push it down until the retaining clips snap into place (Figure 2). We recommend slotting memory modules from the top socket. Replace the i-RAM battery after inserting the memory module(s).

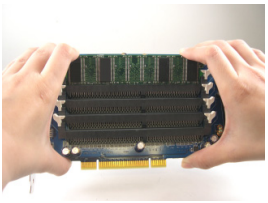


Figure 2

NOTE To remove the memory module, support the memory module with your fingers while spreading the clips. This prevents the memory module from being damaged when it pops out.

Step 3: Install i-RAM

Select a free PCI slot and remove the screw and slot bracket. Press the i-RAM card firmly into the slot and replace the screw to secure the slot bracket of the i-RAM card. (Figure 3)

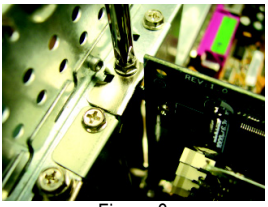


Figure 3

Step 4: Connect SATA Cable

Attach one end of the SATA interface cable to the SATA connector on the i-RAM card (Figure 4). Locate an available SATA connector on your motherboard and plug the other end of the SATA interface cable into the SATA connector.

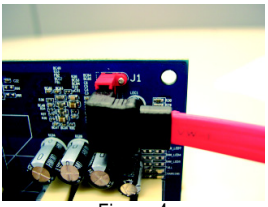


Figure 4

Step 5: Configure System BIOS

At system startup, enter system BIOS when prompted. Read the motherboard or system documentation and assure that the motherboard SATA port connecting to i-RAM is enabled. Finally, make sure i-RAM has been detected as a normal hard drive by system BIOS.

Step 6: Format i-RAM

In order for i-RAM to be visible in your operating system, it must be formatted. You can format i-RAM using FDISK, Windows Disk Management or other third-party tools.

You are now ready to use i-RAM as a normal hard drive.

CAUTION During setup, always read and adhere to the instructions above.

LEDs Information:

The LEDs in the top right of the battery holder provide the following information:

LED	Color	Description
PHY_READY	Blue	i-RAM is correctly detected
HD_LED	Blue	i-RAM is writing or reading data
3VDUAL	Yellow	i-RAM is powered by motherboard
CHARGING	Yellow	The battery is being charged

LED	Color	Description
FULL	Green	The battery is at full charge
FAULT	Red	Battery malfunctions

7. Appendix

Recommended Memory Support List

Please refer to the memory support list below:

DDR400 (256MB)

Module Supplier	Comp. Used	Module P/N.	Component P/N.
Samsung	Samsung	KOREA 0309 PC3200U-30331-A1 M381L3223ETM-CCC 256MB DDR PC3200 CL3 ECC	K4H560838E-TCCC (ECC)
Micron	Micron	MT16VDDT3264AG-40BB5 PC3200U-30330-B1 256MB DDR400 CL3	MT 46V16M8-5B
Buffalo	Buffalo	DD4333-S256/MC PC3200U-30330-A1 256MB 400Mhz-CL3	MT 46V32M8-5BC

DDR400 (512MB)

Module Supplier	Comp. Used	Module P/N.	Component P/N.
Transcend	Mosel	512M 184 DDR=HP 512M DDR400 DIMM 3-3-3 8144 Y0347	V58C2256804SAT5B
Elixir	Elixir	M2U51264DS8HC1G-5T 512MB DDR400 CL3PC3200U-30330	ELIXIR N2DS25680CT-5T
Geil	Geil	512M DDR400ULTRA(32M8)	MPEA3200C2UD2-512
ProMOS	Mosel	V826664K24SCIW-D3	0512PP V58C2256804SC15
Transcend	PSC	512M DDR400 DIMM 2.5-3-3	PSD A256D30BTP 513ASN14 TAIWAN AN-5

DDR400 (1GB)

Module Supplier	Comp. Used	Module P/N.	Component P/N.
Transcend	Micron	1G184PDDR=LR 1GDDR400 DIMM 3-3-3	MT 46V64M8-5B C
Kingston	Samsung	KVR400X64C3A/1G	K4H510838C-UCCC

Note: For the latest memory support list information, please visit GIGABYTE's website at http://www.gigabyte.com.tw.

8. iRAM EasyBackup utility introduction

Installation guide :

Please click the folder "i-RAM backup utility" from provided driver CD (or download it from GIGABYTE's website at http://www.gigabyte.com.tw). Extract the file and it will creat two main backup utility folders, DOS and Windows version.

Windows version:

After Windows OS installation, please click the icon to install the iRAM EasyBackup.

DOS version:

Please run the file "iram".

iRAM EasyBackup main screen :

For Windows :

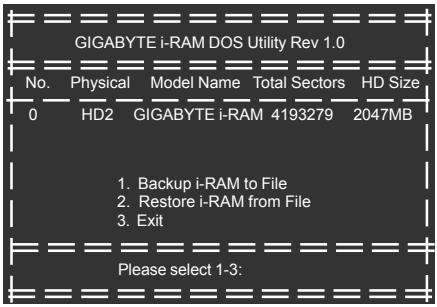
Backup i-RAM to File :

Backup i-RAM data to hard disk.

Restore File To i-RAM :

Restore the backup data from i-RAM.

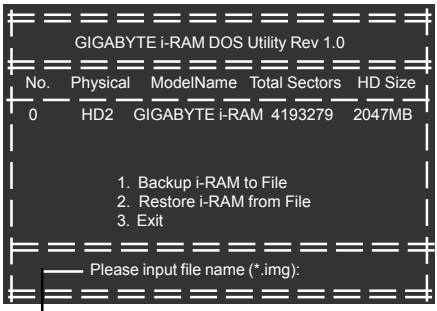
For DOS :


GIGABYTE i-RAM DOS Utility Rev 1.0
No. Physical Model Name Total Sectors HD Size
0 HD2 GIGABYTE i-RAM 4193279 2047MB
1. Backup i-RAM to File
2. Restore i-RAM from File
3. Exit
Please select 1-3:

iRAM EasyBackup screen :

Save as (destination)

select i-RAM disk (source)


GIGABYTE i-RAM DOS Utility Rev 1.0
No. Physical ModelName Total Sectors HD Size
0 HD2 GIGABYTE i-RAM 4193279 2047MB
1. Backup i-RAM to File
2. Restore i-RAM from File
3. Exit
Please input file name (*.img):

Please keyin disk drive and path, and file name must be¡ §*.img ¡."

i-RAM
(GC-RAMDISK-RH)

使用手冊

Rev. 1003

* 產品上之 WEEE logo 意指本產品必須透過特定廢棄物回收管道回收，不得任意拋棄！
* 此 WEEE 相關法令規定僅於歐盟國家實施。

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感謝您購買技嘉科技最新推出的i-RAM產品。本使用說明提供您i-RAM的產品特色及規格資訊，同時亦提供完整的安裝指引。請您在安裝i-RAM至您的系統前務必詳讀此份說明及相關注意事項。

繁體中文

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1. 產品特色

- 最快的系統開機速度 -- 符合SATA 1.0a 界面標準，與一般硬碟相同， i-RAM 可做為作業系統的開機磁碟。
- 最快的資料存取速度 --使用高速的DDR記憶體，支援DDR 266/333/400記憶體模組。
- 資料的讀寫速度最快--最適合應用於需要大量資料存取的程式。例如：影音編輯、3D/2D電腦繪圖軟體、網路伺服器、電子郵件伺服器、資料庫存取交換、伺服器與工作站等。
- 安全有效的資料保存

  --當電腦關機後，i-RAM的資料，可使用電腦上的備用電源(Standby Power)，長期保存。

  --當市電中斷或拔掉電腦的電源插頭後， i-RAM 的資料亦可經由 i-RAM 的充電電池，繼續供電一段時間，以保存資料(註一)，方便使用者或工程師在等待供電恢復之前，進行必要的資料移植備份措施，也有利於 i-RAM 與電腦在短時間與短程的搬遷過程中，不需擔心 i-RAM 的資料會遺失。
- 符合 SATA 1.0a 界面標準 -- 在使用任何有支援 SATA 1.0a 標準的作業系統時，不需要另外安裝驅動程式。
- 備份工具相容-- 支援一般磁碟機資料備份 / 回存軟體。
- 無噪音-- 沒有一般磁碟機運轉時所發出的噪音。
- 防震動-- 採用電子式的資料存取，可在劇烈搖晃的環境中正常運作。

2. 產品規格

- 符合 PCI 2.2 機構規格:
- 方便經由 PCI 插槽提供電源
- 適合個人電腦和伺服器的安裝使用
- SATA 界面:
- 符合SATA 1.0a 界面標準
- 使用SATA連接插頭
- 資料傳輸率為每秒150MB
- 記憶體界面：
- 支援最大記憶容量為 4GB
- 四個184-Pin/2.5V DDR記憶體模組插槽
- 支援DDR 266/333/400記憶體模組(註二)
- 支援總厚度達4.2mm 的記憶體模組(包含散熱片)
- 備份電池:
- 1,700mAh鋰電池

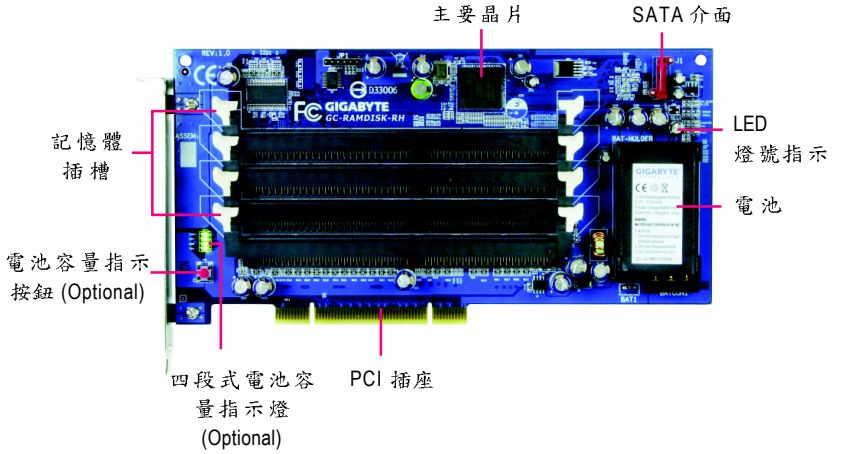
(註一) 使用電池電力保存資料的時間，隨著所使用的記憶體模組數量及容量而有所不同。

(註二) 請參考第 7 頁的記憶體支援表。

3. 系 統 需 求

- 相容於 PCI 2.2 規格的 PCI 插槽
- 支援 SATA (1.5Gb/s)規格的 SATA 插座
- 採用 Intel ICH6/ICH7 系列、VIA 8237 系列、SiS 964 、ULi M1689 南橋晶片的主機板

4. 元 件 配 置



5. 注 意 事 項

一般注意事項：

- 偵測到的記憶體容量會略小於實際安裝的記憶體總容量。
- 當系統被設定為磁碟陣列時，磁碟陣列控制器可能會挪用部份硬碟空間做為 buffer 。例如在 ICH7R 主機板使用 RAID 0 或 RAID 1 時，總容量會短少 512MB~1GB 為正常狀況，不影響其它功能。
- 若需在 i-RAM 安裝作業系統時，請留意安裝該作業系統所需要的最低硬碟容量。
- 建議您不要完全拔掉電源供應器之市電插頭，以維持 i-RAM 上資料的完整性並延長電池壽命。

電池注意事項：

- 電池充電後 i-RAM 即為通電狀態，因此移動或放置時請小心造成短路，避免損害。
- 請勿將電池置於火源中，為防止受傷或起火，嚴禁拆卸本電池或以金屬物碰觸到電池電極端。
- 請勿自行將電池拔除，若發現電池有異狀時，請聯絡技嘉科技快服中心做進一步檢測。
- 位於 i-RAM 左下方的 4 個 LED 燈為指示電池容量用。亮燈的數量越多表示電池內剩餘的電量越多。您可以按著紅色的電池容量指示按鈕即可顯示出目前電池剩餘電量 (Optional)。

資料安全守則：

為避免儲存於 i-RAM 上的資料毀損或遺失，請特別注意以下幾點:

- 請勿將 i-RAM 從 PCI 插槽移除時間過久或關閉電源供應器之市電電源時間過久。
- 請勿將安裝於 i-RAM 上的記憶體拔除。
- 請勿將 i-RAM 從 PCI 插槽移除，且取下電池。
- 建議定期將 i-RAM 內的資料做備份，可使用技嘉科技所提供(請至技嘉科技網站 http://www.gigabyte.com.tw 下載)或市面流通的硬碟資料備份軟體。技嘉科技提供的保固服務不包含儲存於 i-RAM 內的資料。

CAUTION

操作時的環境溫度 (Ambient Temperature) 0°C~45°C；
儲存時的環境溫度 (Ambient Temperature) -20°C~50°C。
i-RAM 在沒有電力維持下，會造成 i-RAM 資料遺失。

繁體中文

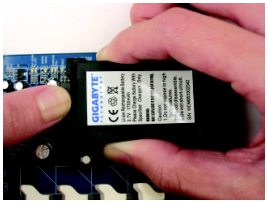
6. 安裝指引

開始使用 i-RAM 之前，請先執行下列步驟：

步驟一：移除系統電源及 i-RAM 電池

先移除系統電源再取下 i-RAM 上面的電池 (見圖一)。

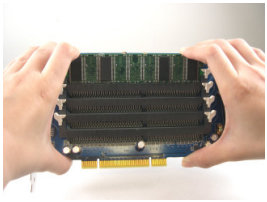
NOTE 註：在每次拆裝 i-RAM 前請確定完全移除系統電源還有取下 i-RAM 電池以免損壞。



圖一

步驟二：安裝記憶體

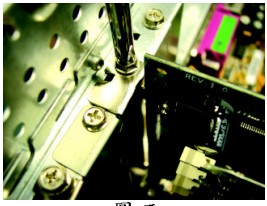
將 i-RAM 平放於防靜電墊上。記憶體模組有一個凹痕，所以只能以一個方向插入。請扳開記憶體插槽卡榫，以雙手按在記憶體模組上邊兩側，將記憶體模組下壓推入插槽。一旦確實壓入插槽，兩旁的卡榫便會自動向內卡住記憶體模組予以固定 (見圖二)。建議由最上面的記憶體插槽開始安裝。請將 i-RAM 電池裝回。


圖二

NOTE 註：需移除記憶體時，請先以手輕扶記憶體再扳開卡榫，避免卡榫扳開後，記憶體劇烈跳出而造成毀損。

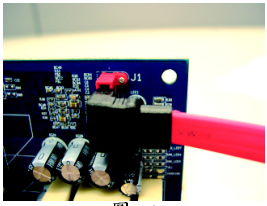
步驟三：安裝 i-RAM 至系統

選擇一個空的 PCI 擴充槽，鬆開 PCI 擴充槽旁的金屬擋片上的螺絲，移開金屬檔片。將 i-RAM 小心且確實地插入擴充槽中，並將螺絲鎖回 (見圖三)。


圖三

步驟四：連接 SATA 資料傳輸線

將 SATA 資料傳輸線的一端連接至 i-RAM 上的 SATA 插座 (見圖四)，再將另一端插入主機板上的 SATA 插座。



圖四

步驟五：設定系統 BIOS

開機後依螢幕指示進入系統 BIOS 設定程式。參考主機板 / 系統使用手冊，確認連接 i-RAM 的 SATA 插座為啟動狀態。最後再度確認 i-RAM 是否已被系統 BIOS 正確辨識為一般硬碟。

步驟六：格式化 i-RAM

為使作業系統正確辨識 i-RAM ，您需先將 i-RAM 進行格式化。您可以使用 FDISK 、 Windows 磁碟管理工具或其它工具來格式化 i-RAM 。

將 i-RAM 格式化之後，您即可將 i-RAM 當做一般硬碟使用。

CAUTION 安裝時，請確實遵守以上步驟指示。

LED 燈號指示說明

位於電池座右上方的LED指示燈，會依不同狀況亮燈，請參考以下表格:

LED 指示燈	狀 態	訊 息
PHY_READY	藍燈	開機後 i-RAM 正確辨識
HD_LED	藍燈	資料讀寫中
3VDUAL	黃燈	i-RAM 由主機板供電中
CHARGING	黃燈	電池充電中

LED 指示燈	狀 態	訊 息
FULL	綠燈	電池為充飽狀態
FAULT	紅燈	電池異常

7. 附 錄

建議記憶體支援列表

請參考以下記憶體表格:

DDR400 (256MB)

Module Supplier	Comp. Used	Module P/N.	Component P/N.
Samsung	Samsung	KOREA 0309 PC3200U-30331-A1 M381L3223ETM-CCC 256MB DDR PC3200 CL3 ECC	K4H560838E-TCCC (ECC)
Micron	Micron	MT16VDDT3264AG-40BB5 PC3200U-30330-B1 256MB DDR400 CL3	MT 46V16M8-5B
Buffalo	Buffalo	DD4333-S256/MC PC3200U-30330-A1 256MB 400Mhz-CL3	MT 46V32M8-5BC

DDR400 (512MB)

Module Supplier	Comp. Used	Module P/N.	Component P/N.
Transcend	Mosel	512M 184 DDR=HP 512M DDR400 DIMM 3-3-3 8144 Y0347	V58C2256804SAT5B
Elixir	Elixir	M2U51264DS8HC1G-5T 512MB DDR400 CL3PC3200U-30330	ELIXIR N2DS25680CT-5T
Geil	Geil	512M DDR400ULTRA(32M8)	MPEA3200C2UD2-512
ProMOS	Mosel	V826664K24SCIW-D3	0512PP V58C2256804SC15
Transcend	PSC	512M DDR400 DIMM 2.5-3-3	PSD A256D30BTP 513ASN14 TAIWAN AN-5

DDR400 (1GB)

Module Supplier	Comp. Used	Module P/N.	Component P/N.
Transcend	Micron	1G184PDDR=LR 1GDDR400 DIMM 3-3-3	MT 46V64M8-5B C
Kingston	Samsung	KVR400X64C3A/1G	K4H510838C-UCCC

註：若要查詢最新記憶體支援相關資訊，請至技嘉網站(http://www.gigabyte.com.tw)查詢。

繁體中文

安裝說明：

請從隨貨附贈的光碟中(或從技嘉科技網站 http://www.gigabyte.com.tw 下載)，點選目錄”i-RAM backup utility”，解壓縮後會產生 DOS 及 Windows 兩個目錄，以下分別介紹 DOS 及 Windows 版本的使用說明。

Wondows 版本：

安裝完成後，請執行桌面上 iRAM EasyBackup 的選項。

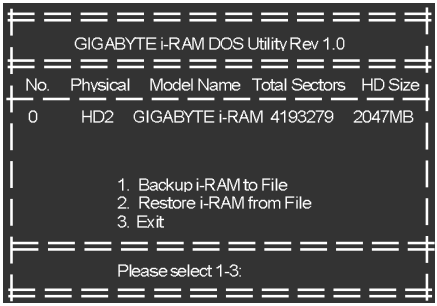
DOS 版本：

請執行目錄內檔案 iram。

iRAM EasyBackup 主畫面：

For Windows :

For DOS :


GIGABYTE i-RAM DOS Utility Rev 1.0
No. Physical Model Name Total Sectors HD Size
0 HD2 GIGABYTE i-RAM 4193279 2047MB
1. Backup i-RAM to File
2. Restore i-RAM from File
3. Exit
Please select 1-3:

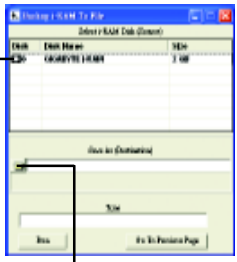
Backup i-RAM to File：

將 iRAM 內的資料檔案備份至硬碟中。

Restore File To i-RAM：

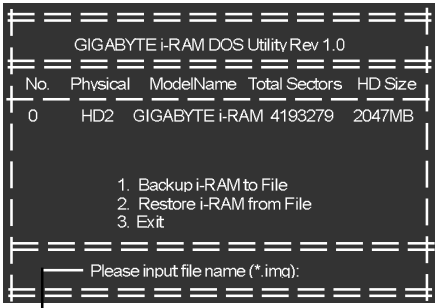
將硬碟中之來源資料，還原至 i-RAM 中。

iRAM EasyBackup 備份畫面：



選擇 i-RAM 磁碟機

選擇儲存檔案之所在位置


GIGABYTE i-RAM DOS Utility Rev 1.0
No. Physical ModelName Total Sectors HD Size
0 HD2 GIGABYTE i-RAM 4193279 2047MB
1. Backup i-RAM to File
2. Restore i-RAM from File
3. Exit
Please input file name (*.img):

請輸入磁碟機代碼及路徑，副檔名務必為 “*.img”。